

# RAILWAY SAFETY AT UIC – A GLOBAL ANSWER TO INCREASING CHALLENGES

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## SUMMARY

Safety is one of the railways' main assets compared to other transport modes. UIC and its members are therefore working together to maintain and further improve safety levels. Safety is one of the transverse units within the "Fundamental Values Department" at UIC Headquarters, located in Paris.

The Safety Unit coordinates the working bodies of the UIC Safety Platforms, activities on safety at level crossings, organizes international seminars and workshops on safety issues in the different regions. The following three multidisciplinary Task Forces were established this year, composed of experts from different railway fields:

- Safe contractor management
- Signals Passed at Danger (SPAD)
- Safety Culture and Safety management systems

UIC has prepared a number of objectives to move the safety focus forward. These have been grouped around the core themes of people, process, performance and communication.

## INTRODUCTION

UIC is the worldwide organization for the promotion of rail transport and cooperation across the world and comprises about 240 members on all 5 continents. UIC, as a technical platform provides its members with technical know-how and ensures the coherence of the rail system to help meet challenges of mobility sustainable development.

UIC has set up high-level professional cooperation bodies capable of defining and directing technical projects to best serve the interests of its members. Thus alongside the "Passenger", "Freight" and "Rail System" Forums, encompassing numerous technical and operational areas, has been set in place, covering the areas of infrastructure, rolling stock and train dynamics, signalling and control-command. In addition, the "Fundamental Values Department" at UIC Headquarters is tasked with giving fresh impetus to and maintaining coherence between a numbers of areas of activity vital to the success of the railways: safety and security, sustainable development, research, and expertise development. All these

activities have resulted in the launch of new projects or campaigns to promote the advantages of rail across the world.

### **UIC SAFETY PLATFORM**

The UIC Safety Platform provides a forum for sharing information and experience among the Safety Directors of UIC Members to identify risks posing threats to the safety of the rail system and to develop solutions. Members may be railway undertakings as well as infrastructure managers or integrated railway companies. Safety is a transverse subject, involving all potential players of various interfaces. The UIC Safety Unit also supports seminars dedicated to railway safety issues in different regions (Asian-Pacific, Middle-East and North of Africa for example).

The UIC Safety Platform, chaired by Mr. Peter Kleinschuster (ÖBB) pursued its activities in the following five core areas:

- Safety Management System
- Safety Performance/Safety Database
- Human Factors/Safety Culture
- Occupational Health and Safety
- International Rail Safety Network

### **Support to Safety groups of the European Railway Agency (ERA)**

The common UIC “System Safety Management Group” (SSMG)/CER Safety Support Group drafts position papers and proposals for the speakers in the safety related working groups of the ERA on various issues such as:

- Common Safety Methods for Risk Assessment (CSM-RA)
- Common Safety Performance
- Certification of Entities in Charge of Maintenance (CECM)
- Common Safety Methods for Monitoring
- Safety Certification –towards to a “Single Safety Certificate” (SSC)
- Roles and tasks of stakeholders in the safety chain of railway activities

This WG is also dealing with the question of the transport of dangerous goods transport and the “Derailment detector device” (DDD).

There is also a regular information exchange on ERA-related safety topics with experts of the “International Liaison Group of Governmental Railway Inspectorates” (ILGRI) - an informal group of representatives of “National Safety Authorities” (NSA).

## **UIC Safety Database/Safety Performance**

The goal of the UIC Safety Database (SDB) is to create an inventory of information containing not only accident statistics, but comprehensive detail about causes, descriptions, severity and particularities of accidents. Every “significant” accident, meaning those causing personal injury, major costs, or disruptions to railways, is catalogued with a wealth of information. These data include the type of line, location and rolling stock involved, the nature and cause of the accident with a verbal description, information about accident victims, and other categories of data which can be extracted and analysed in connection with various studies.

Approximately 10 years ago, the UIC began recording significant accidents and events. Since 2006, tables and graphs of comparable data from 21 European UIC members have established a benchmark and allowed trends and developments in railway safety to be identified. More than 75% of accidents are caused by “third parties” (level crossing users and people trespassing on the track). To this can be added a large number of suicides, which impact negatively on railway operations. Here, society as a whole must pull in the same direction in order to improve matters.

The SDB can be used by members to compare statistics and trends across Europe, and to identify particular risks or successes. A SDB report is published every year. The public version of this report is available on the UIC website: <http://safetydb.uic.org>

There are initiatives within other regions, especially Asian-Pacific and Middle-East, to establish similar safety databases, using the same principles as in Europe.

## **Human factors/Occupational health and safety**

To include a human and organizational factors approach in safety means drawing on knowledge from the human and social sciences and finding ways to link this with concrete operational issues. UIC has prepared a number of objectives to move the safety focus forward. These have been grouped around the core themes of people, process, performance and communication.

Three multidisciplinary Task Forces were established this year composed of experts from different railway fields. The work is special time-limited and objective-oriented. This Task Force activity is in line with the human and organizational factors approach.

### Task Force “Safe contractor management”

Since the 1990s UIC members have increased both the volume and scope of work undertaken by contractors (including sub-contractors). A number of serious accidents have resulted from the activities of contractors and there have also been contractor fatalities. There are continuing concerns on the part of several UIC members that the safety and quality of work undertaken by contractors is inferior to that of work undertaken in-house. However there are also examples of good practice where contractors work closely with infrastructure managers and/or railway undertakings to improve levels of safety and quality. To identify and analyse the most successful contracting arrangements, use of aligned incentive,

appropriate performance indicators and effective assurance frameworks to enable best practice and high levels of safety.

The expected outcome of the Task Force work will be a guide to share best practice across UIC members. This will include specific examples of arrangements implemented to address contractual, social and behavioral elements.

#### Task Force “Signals passed at danger” (SPAD)

Signals passed at danger are one of the main defects in the rail system. They are likely to have a severe impact. The railway companies are all seeking to find solutions to reduce the number o SPADs.

The expected outcome of this Task Force will be recommendations and a workshop to present the results.

#### Task Force “Safety culture and Safety management systems”

Safety management and safety culture are two distinct subjects which interact.

- They are distinct

Safety management is a set of processes and related practices, the purpose of which is to analyse the risk involved in an activity, deal with them in advance, oversee the execution of the activity in question, and record any lessons learned in order to improve the system.

Safety culture is a set of values, attitudes and behaviors adopted by individuals at various levels of an organization.

- Safety management impacts on safety culture

Safety management is a medium and a vehicle for the development of a safety culture. It will produce a certain type of safety culture resulting both from a SMS’s design and, in particular, from the way it is applied by the various stakeholders in the company.

What type of safety management produces what type of safety culture?

- The ambient safety culture influence the design of the safety management system

Can we consider that a good safety culture results in highly efficient safety management, implying as it does a set of positive attitudes shared amongst all stakeholders, healthy consideration for safety issues, realistic processes, engagement with the “front line”, etc?

## **SAFETY AT LEVEL CROSSINGS – THE ROAD/RAIL INTERFACES**

The “International Level Crossing Awareness Day” (ILCAD) has been spearheaded by UIC with the support of the railway community around the world. The 7<sup>th</sup> edition of such a unique road/rail campaign held in 2015 on the 3 June in more than 40 countries across five continents, structured around the joint message “Act safely at level crossings”. A growing number of road sector organizations, the European Commission and the United Nations – Economic Commission for Europe (UNECE) are also involved in raising awareness of the risk at level crossings in order to change road users’ and pedestrians’ behavior to act safely at level crossings.

This campaign proceeds from an uncomfortable statistic: too many people die or are injured in accidents at level crossings. Even if according to European statistics level crossing accidents account for only 1% of road deaths the comprise 29% of rail fatalities. Statistics show also that the majority of these are due to misuse by motorists and pedestrians but the popular misconception is that these incidents are a railway problem. Conferences on the issues show that the only really effective way to decrease the number of accidents, short of closing all level crossings, is Educating people, highlighting the risks and making them aware of the potential consequences if they do not follow the simple rules of road. Finally when Education fails or is not sufficient the next step is to take Enforcement measures.

ILCAD is built around a range of national events held jointly at various locations in every participating country. In addition to regular or permanent activities held through the year, many special communication actions take place: flyers handed out at level crossings, in schools, driving schools to scouts. Posters are on the internet and there will be special messages broadcast on radio and television. More information can be found on the dedicated website: <http://www.ilcad.org> ILCAD 2016 is in preparation, to be held in Riga/Tallinn, 10<sup>th</sup>/11<sup>th</sup> June.

UIC is member of a Group of Experts (GE) on level crossing safety created at the initiative of UIC and UNECE under the umbrella of the UNECE WP on road traffic safety. The kick-off meeting of this GE took place in January 2014 in Geneva with the participation of the UIC GD, Jean-Pierre Loubinoux and has a time limit of two years. The final objective of this group is to produce a strategic report and recommendations covering key important areas of level crossing safety.

The 14<sup>th</sup> “Global Level Crossing and Trespass Prevention Symposium” (GLXS) will take place in Helsinki, Finland on 12 – 16 June 2016. GLXS is a biennial event bringing together engineering safety, security, human factors, practitioners, academics and researchers from the global road, rail, law enforcement, research and regulatory communities. Please find here the dedicated website for more information: <http://www.trafi.fi/en/GLXS2016>

## **CONCLUSION**

Having processes and automation in place is important but it is the human factor that can often be the weak link. This aspect must continue to be taken into account. The important task of training people to understand change and innovation impact on safety is imperative.

A range of continuous improvements and progressively automating systems such as Control, Command and Communication will lead to a positive impact on operational efficiency and safety and customer satisfaction and attraction.

Competition and business-led management are important factors for developing rail transport. However, achieving this level of performance relies on collaboration between all parties in the railway sector to ensure effective management of critical interfaces.